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TESTIMONY
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COMMITTEE ON RESOURCES
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OVERSIGHT HEARING ON OPPORTUNITIES AND CHALLENGES ON ENHANCING FEDERAL POWER GENERATION
AND TRANSMISSION
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Mr. Chairman, members of the Subcommittee, I am Leslie James, Executive Director of the Colorado River Energy Distributors Association (CREDA). I am pleased to have been asked to talk with you today regarding the Colorado River Storage Project, and opportunities and challenges to enhancing federal power generation and transmission resources from this federal multi-purpose project.

CREDA members (contractors) have entered into long-term, cost-based contracts with the Western Area Power Administration (WAPA), a power marketing administration of the Department of Energy, for purchase of federal hydropower resources of the Colorado River Storage Project (CRSP). These contracts provide for rate adjustments in order to ensure repayment of the federal investment in the CRSP. Our purpose today is to provide some background on the facilities of the CRSP, and to describe environmental and drought-related financial impacts on both the federal facilities and CRSP contractors, both in terms of opportunities and challenges. First, a description of CREDA and its membership.

CREDA is a non-profit organization representing consumer-owned electric systems that purchase federal hydropower and resources of the CRSP. CREDA was established in 1978, and serves as the "voice" of CRSP contractor members in dealing with resource availability and affordability issues. CREDA represents its members in working with the Bureau of Reclamation (as the generating agency of the CRSP) and WAPA (as the marketing agency of the CRSP). CREDA members are all non-profit organizations, serving over four million electric consumers in the six western states of Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. CREDA members purchase over 85% of the CRSP power resource. Attached is a listing of current CREDA members. At the time CREDA was formed, the key issue for its members was the continuing increase in CRSP rates. CREDA members felt it would be more effective and efficient to have a single organizational "voice" for them in regard to rate, federal legislative and environmental issues impacting the CRSP.

CRSP contractors have been ensuring repayment of the federal investment for 35 years, by entering into long-term contracts to purchase the CRSP resource and by paying all of the federal investment in generation and transmission facilities (with interest), all power-related operation and maintenance costs, and environmental costs. In addition, the CRSP contractors are paying over 95% of the cost of the irrigation features of the CRSP (beyond the ability of the irrigators to pay). In fact, in the current CRSP rate, 25% of the total annual revenue requirement is due to irrigation assistance! It is important to note that the cost-based nature of the CRSP rate includes costs beyond simply those associated with generation of the hydropower resource. A further example is the cost of the Glen Canyon Adaptive Management Program (AMP) and the Upper Basin Endangered Fish Recovery Implementation Program (RIP). More detail on these costs will be provided below. Next, a description of the CRSP.

The Colorado River Storage Project (CRSP) was authorized in the Colorado River Storage Project Act of 1956 (P.L. 485, 84th Cong., 70 Stat. 50), as a multi-purpose federal project that provides flood control; water storage for irrigation, municipal and industrial purposes, in addition to the generation of electricity. This testimony will focus on the major generation features of the CRSP, although there are several irrigation projects included in the Project. The CRSP power features include five dams and associated generators, substations, and transmission lines.

I. THE CRSP FACILITIES AND ENVIRONMENTAL IMPACTS

GLEN CANYON DAM

Glen Canyon Dam is located near Page, Arizona and is by far the largest of the CRSP projects. Glen Canyon Dam began operation in 1964. The water stored behind the dam is the key to full development by the Upper Colorado River Basin states of their Colorado River Compact share of Colorado River water. The Glen Canyon power plant consists of eight generators for a total of about 1300 MW, which is more than 76% of total CRSP generation. The ability of the Bureau to generate, and WAPA to market, the total generating capability of Glen Canyon Dam has been impacted over a period of many years, by various processes and laws. In 1978 the Bureau began evaluating the possibility of upgrading the

eight generating units at Glen Canyon. This was possible primarily due to design characteristics of the generators and improved insulating materials. This upgrade was completed, and the generation was increased from about 1000 MW to 1300 MW. To fully utilize the unit upgrades would require the maximum release of water from Glen Canyon to be increased from 31,500 cubic feet per second (cfs) to about 33,200 cfs. The Bureau also studied the possibility of adding new units on the outlet works to provide additional peaking capacity. The possibility of increasing maximum releases from Glen Canyon raised concerns with downstream users. After discussion with stakeholders, the Secretary of the Interior initiated the first phase of the Glen Canyon Environmental Studies.

In 1982, the Bureau began Phase 1 of the Glen Canyon Environmental Studies. These studies were primarily to analyze the impacts of raising the maximum release from 31,500 cfs to 33,200 cfs on the transport of sediment downstream from the dam, recreation (including fishing and rafting), endangered species (including the humpback chub in the Lower Colorado River), and the riparian habitat along the river banks. The studies proceeded during the early 1980's and were concluded in 1987. The general conclusion of the Glen Canyon Environmental Studies Phase 1 was that the dam had blocked much of the sediment coming down the Colorado River and therefore beaches were not being replenished with sand. Many questioned the results of the Glen Canyon Environmental Studies Phase 1 because the process did not in all cases follow good scientific practice. For instance, the impact on power and water economics was not fully explored.

After reviewing the Glen Canyon Environmental Studies Phase 1 and a review by the National Academy of Science, the Secretary of the Interior determined that the Glen Canyon Environmental Studies should be continued to address the economic impacts, particularly as they relate to power, and also to collect additional data to substantiate some of the conclusions in the Phase 1 report.

The Glen Canyon Environmental Studies Phase 2 was initiated in 1989. The Bureau of Reclamation decided to hire a Senior Scientist to assist with the development of the Phase 2 studies to assure an appropriate scientific process. The Bureau and the Senior Scientist developed Phase 2 studies, which included a series of test flows to evaluate the impact of different operating conditions and to develop response curves for various conditions. Many interested parties, including water, power, recreation, environment, and Native American interests participated in the process.

In July 1989, the Secretary of the Interior announced the start of an environmental impact statement (EIS) on the operation of the Glen Canyon Dam. No specific Federal action was identified for study. Meetings were held during 1990 to seek input into alternatives that should be considered, and the Bureau determined the nine alternatives (including a "no action" alternative) to be studied. Meanwhile, in 1992, the Grand Canyon Protection Act (106 Stat. 4672) was signed into law. Section 1804 of the Act required completion of the EIS within two years. The EIS was completed and the Record of Decision (ROD) signed in October 1996. The result was that Glen Canyon operations were changed to reflect a revised flow regime; approximately one-third of the generating capacity was lost (456 MW). The EIS identifies the annual financial cost to CRSP power contractors at \$89.1 million per year. But this figure is in 1991 dollars and is probably 3-4 times greater today, given energy market conditions. The cost of the Glen Canyon EIS was approximately \$104 million, and was funded by power revenues collected from the CRSP contractors. To date, over \$179 million has been spent on Glen studies, and paid by CRSP power revenues. This figure does NOT include the nearly \$10 million per year spent for the Adaptive Management Program. The GCPA says that CRSP power revenues MAY be used to fund the Adaptive Management Program (emphasis supplied). It is not a mandate, but a permissive use of power revenues, which will be addressed in more detail below.

In April of 2000, it was determined that due to hydrologic conditions and requirements of a 1994 USFWS biological opinion, a low flow summer experiment would be undertaken. The experiment included high spike flows in May and September, with low flat flows (8,000 cfs) all summer. The purpose was to gain information regarding endangered humpback chub conditions. The low, flat flows and hydrology, along with western energy market prices, had a severe impact on power generation, requiring CRSP customers and WAPA to purchase replacement power to meet their resource needs. The cost incurred by WAPA (and to be recovered from CRSP contractors) for this replacement power was \$32 million, just for that summer. The cost of the experiment alone was over \$3.5 million, funded by CRSP power revenues. These figures do NOT include additional costs to CRSP contractors who had to purchase or supplement their CRSP resource with purchases from the energy market.

ADAPTIVE MANAGEMENT PROGRAM

CREDA participates on the Federal Advisory Committee charged with making recommendations to the Secretary of the Interior as to operations of Glen Canyon Dam pursuant to the Record of Decision and underlying laws. Funding for the program (Adaptive Management Program) is through CRSP power revenues. Proposed funding for next year's program is approximately \$10 million. On October 27, 2000, President Clinton signed the FY 2001 Energy and Water Development Appropriations Act, which includes language (section 204) capping the amount of CRSP power revenues that can be used for the Adaptive Management Program at \$7,850,000, subject to inflation. Without this cap, the annual

program costs would have continued to increase more rapidly, with power revenues being the primary funding source. Now, the program will need to seek appropriated dollars for program costs in excess of the power revenue cap. CREDA supports other sources of funding for this program. CREDA also participates on the Technical Work Group, to ensure that good science and efforts to maximize power generation are considered. Science findings in the past few years have indicated that some of the premises behind the EIS/ROD may be in error and that the current flow restrictions may not be beneficial to downstream resources (primarily humpback chub and sediment). It is imperative that these science findings become incorporated into recommendations to the Secretary of the Interior to implement flow changes and management actions to benefit the downstream resources and to maximize power production.

CRSP contractors have paid, and continue to pay, the majority of costs at Glen Canyon, even while the Glen capacity has been depleted by about one-third, and there are significant operating constraints on the remaining available capability, as required by the 1996 ROD. CREDA is optimistic, however, that "lost" capability may become available to the CRSP contractors through the implementation of the results of the many years of monitoring, research and experimentation.

FLAMING GORGE DAM

Flaming Gorge Dam is on the Green River, a major tributary of the Colorado River, and is located near Vernal, Utah. Flaming Gorge has three units producing about 152 MW of generation. In 1992, the USFWS issued a Biological Opinion on the operation of Flaming Gorge Dam. Four years ago, the estimated impacts to power generation since implementation of the Biological Opinion was \$2.87 million per year. Approximately 26 MW have been lost to date due to changed operations to benefit endangered fish. During summer of 2000, the Bureau began the process of completing an EIS on proposed flow recommendations for endangered fish. The Bureau is attempting to keep a narrow scope on the recommendations, but some environmental groups advocated the inclusion of an alternative to tear down the dam. Two CREDA members from Utah are "cooperating agencies" and, thus, are able to participate in the meetings with the federal agencies. The cost of the Flaming Gorge Dam EIS is expected to be over \$3 million, and a final draft EIS may be produced this spring.

ASPINALL UNIT

The Aspinall Unit includes three dams and generating plants along the Gunnison River near Gunnison, Colorado. Blue Mesa is the first dam on the river and has two units producing about 97 MW. Morrow Point is the second dam in the series and consists of two generators producing a total of 146 MW. Crystal is the final dam and has one 32 MW generator. Morrow Point and Crystal Reservoirs allow some regulation of the river flow so that releases from Crystal can be used to regulate downstream flows as necessary. Since the early 1990's as part of the Upper Colorado River Endangered Fish Recovery Implementation Program, or RIP, studies have been undertaken to determine fish needs in this region. CREDA's interpretation of the USFWS's flow recommendations is that they advocate a return to "natural", or almost pre-dam flow patterns. In our view, this goal is unattainable and unrealistic. The dams are there, the environment has changed, and efforts to recover fish should recognize those facts. The primary purposes of this feature of the CRSP need to be recognized and maintained. In November 2004, Reclamation held the first Cooperating Agency meeting, which they have opened to the public. One of CREDA's members, Platte River Power Authority (Colorado), is a cooperating agency in the process. It is anticipated this EIS process will take 3-4 years. CREDA's view is that the scope should remain narrow, focusing on operations which may assist in meeting the USFWS flow recommendations, but that the obligation of the Project is to avoid jeopardy.

Another looming impact on power generation on the Gunnison River comes with the filing by the National Park Service of a proposal to quantify reserved water rights for the Black Canyon of the Gunnison National Monument. This filing was made in Colorado Water Court on January 17, 2001. (Case No. W-437, District Court, Water Division No. 4, Colorado). CREDA is one of over 200 intervenors in this case, and litigation has been filed as well in Federal District Court by environmental opposers. In April, 2003, the Department of the Interior entered into a settlement agreement with the State of Colorado, which is intended to provide water for fish purposes while continuing to comply with Project purposes and State water law. The Federal litigation has challenged that settlement. CREDA's analysis of the proposed quantification is that the proposal is unachievable and will have a severe impact on power generation and existing water rights within the State of Colorado.

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY IMPLEMENTATION PROGRAM (RIP)

The RIP was established through cooperative agreements among States and federal agencies in 1988 for a 15-year period to help recover four endangered fish in the Upper Colorado Basin. Power revenues currently fund about 60% of the base research / study program. Authorizing legislation was passed in October 2000, which authorized a \$100 million capital improvements program. CREDA testified in support of this legislation in both House and Senate hearings. The legislation provides matching funds for the capital program so that, in the event State funding for the program ceases, so too does power revenue funding. The legislation had the support of the Upper Basin States, CREDA, federal agencies and some environmental groups. Why did CREDA support it? 1) It caps CRSP cost exposure; 2) unlike in the Grand Canyon,

the States are contributing funding; and 3) also unlike in the Grand Canyon, the authorization expires in 2011 and the program will have to be reauthorized by Congress.

The legislation requires CRSP power revenue funding for monitoring and research of up to \$6 million per year. In addition, the Upper Basin States and CRSP power revenues each contribute \$17 million toward capital features. The legislation recognized that changes in operation of Flaming Gorge and Aspinall generation as a result of Biological Opinions cost CRSP contractors \$2 to \$5 million per year. Notwithstanding the passage of authorizing legislation for the RIP, CREDA still has concerns regarding ongoing impacts to operation of the Federal facilities (through the Flaming Gorge and Aspinall EIS processes). Recovery should be achieved through the capital features of the RIP, not relying solely on dam operations. Notwithstanding the USFWS completion of a thorough public process and development of Recovery Goals for the four species of endangered fish, in March 2004, an environmental group has filed suit in Arizona District Court challenging the humpback chub recovery goals. It is anticipated the Court could rule on this litigation during spring of 2005.

II. THE CRSP FACILITIES AND DROUGHT IMPACTS

The Colorado River Basin is in its sixth consecutive year of drought. In the 100 years of record keeping by the Bureau, there have never been six consecutive years of drought. Lake Powell is at its lowest level since 1970 at 3561 feet, which is 138 feet from full pool. It is approaching minimum power generation level. If this year's hydrology mirrors the past two years, this level could be reached as soon as February 2006. If minimum power generation level is reached, there will be little CRSP generation available to the CRSP contractors. This will have significant economic consequences for the CRSP contractors and the customers they serve, as well as for a number of other non-power programs that are funded with CRSP power revenues.

THE UPPER COLORADO BASIN FUND

The Basin Fund is a revolving fund maintained by CRSP power revenues. The Basin Fund is the source of CRSP project repayment, including: repayment of the capital investment with interest, operation, maintenance and replacement expense, 95% of the irrigation investment, Bureau and WAPA employee salaries (about \$80 million annually). In addition, the Fund has been the source of funding for other "non-power" programs:

*Approximately \$18 million for the Colorado River Salinity Control Program;

*\$179,577,774 for the Glen Canyon Adaptive Management Program;

*\$40,399,329 for the Upper Colorado River Basin and San Juan Basin Endangered Fish Recovery Programs.

The programs listed above total about \$20 million per year.

In addition, due to reduced generation levels from the CRSP resource, WAPA has had to purchase power on the open market to meet its contractual requirements. This year alone, they have spent \$50.5 million from the Upper Colorado Basin Fund for replacement power. In order to maintain a sufficient Basin Fund level, in October 2002 the CRSP rate was increased 17%. Then, in October 2003, WAPA reduced energy deliveries to its customers by 26%. Each customer has had to "make up" the shortfall on its own. WAPA is also beginning a rate increase process, estimated to increase the CRSP rate 24%.

CREDA is working with WAPA to develop a program that would allow some customers to procure their own supplemental power instead of through WAPA. This would shift some of the Basin Fund risk from WAPA to the customers by allowing the customer to decide how the shortfall in CRSP generation should be made up.

Since 1998, the Basin Fund has been at risk of deficiency due to reduced generation levels, market price conditions and expenditures for environmental testing. CRSP customers have experienced increased rates and reduced energy deliveries. In the event generation ceases at Glen Canyon Dam, the CRSP rate would have to increase fourfold, which would also be approximately double the cost of energy that could be procured on the open market.

CREDA members, all non-profit entities, have no option other than to pass those costs on to their consumers. For most, if not all, CRSP customers, particularly the 55 new Native American customers who became CRSP customers in October 1, 2004, this cost would be prohibitive, and would defeat any potential benefit the CRSP resource may provide to those customers.

NON-POWER RELATED PROGRAMS SHOULD BE FUNDED BY APPROPRIATIONS, NOT CRSP CUSTOMERS

CREDA is concerned that, when generation is ceased or close to being ceased at Glen Canyon Dam, an effort will be made to require CRSP power users to fund the non-power programs described above. This would, in effect, be a subsidy from

the electric consumers in six Western states to all the parties that benefit from the Salinity Control, Adaptive Management and Endangered Species Recovery programs on the river.

Instead, the non-power programs should seek appropriations from Congress to fund activities when the Basin Fund is depleted. Further, the Basin Fund should be limited to “the basics”, namely, those costs that are mandated by law to be repaid by the Fund. The Glen Canyon Adaptive Management Program authorizes, but does not mandate, the use of CRSP power revenues for program funding. The Endangered Fish Recovery Programs legislation requires the Bureau and WAPA to seek appropriations in times of financial need.

From a public policy standpoint, these programs are intended to benefit the environment, which is in the public interest, and therefore should be funded by appropriations. Providing appropriations for these programs would assist in maintaining the Basin Fund’s solvency.

III. CRSP RATES AND WORK PROGRAM

When the federal reclamation projects were begun, they were designed, constructed, operated, and maintained by the Bureau. The Bureau also owned the transmission system and marketed the power from the projects. When WAPA was formed under the Department of Energy Organization Act in 1977, the design, construction, operation, and maintenance functions remained with the Bureau and the transmission system and marketing responsibilities were moved to WAPA. Construction and capital projects are funded through the federal Treasury at the interest rate determined by Congress or at the time construction starts. These projects go through a budgeting process associated with the federal budget, and money is appropriated for these projects with congressional approval. As revenues are collected for the sale of federal power, there is a priority assigned to payment of obligations. The priority of repayment of the projects is that O&M expenses for WAPA and the Bureau are paid first and then repayment of the highest interest loans is made to the federal Treasury. The components associated with the power features are paid first, including the appropriate interest, and then the power revenues are used to pay the irrigation projects at no interest.

Each year WAPA compiles a “power repayment study” which estimates expenses of both the Bureau and WAPA, and is the basis for the CRSP rate. After WAPA has completed the power repayment study and if a rate adjustment is necessary, a public process is begun. This process includes a notice in the Federal Register that a rate adjustment is necessary, public information and comment meetings, and then the proposed rate is filed with the Federal Energy Regulatory Commission (FERC) for review. The rate can be put into effect on an interim basis while FERC reviews the rate, and if FERC concurs, the rate becomes final. FERC may also choose to remand (or send back) the rate.

In 1992, CREDA, the Bureau and WAPA entered into a contractual arrangement that provides CREDA the ability to review agency work plans and through a defined process, provide customer input and perspective to the agencies. The agreement also provides for dispute resolution, so that in the event the customers are unable to reach agreement with the agency(ies) over specific line items within the work plans, there is a process by which their views can be expressed at the Administrator/Commissioner level. The process has resulted in better communication and collaboration; it has permitted the customers who ultimately are responsible for “paying the bills” to be involved in a collaborative process, rather than having to rely solely on the FERC or litigation as an alternative. CREDA views this arrangement as a model, particularly since it is embodied in a contractual arrangement and outlines a defined schedule, process and dispute resolution opportunity.

IV. CONCLUSIONS AND RECOMMENDATIONS

- There are opportunities to enhance generation from the federal facilities of the CRSP, but those opportunities must be cautiously considered in light of potential impacts of the Endangered Species Act. The authorized purposes of the CRSP must be maintained, and not undermined. Science underlying proposed changes in operations must be peer-reviewed, in consultation with all relevant stakeholders, and should take into account elements of federal energy policy and economic impacts. There must be a balance between costs and impacts.
- CRSP resources are marketed under long-term, cost based contracts and guarantee repayment of the federal investment in power facilities as well as its very sizeable investment in irrigation projects. During the period of extreme drought, funding for “ancillary” programs should be provided by federal appropriations to ensure the solvency of the Basin Fund. Legislation may be needed to accomplish this. The Bureau and WAPA should be encouraged to minimize costs to the greatest extent possible.
- Federal hydropower facility operating agencies should be encouraged to maximize production from those facilities, recognizing existing legal constraints, through a collaborative review and planning process with their electric customers. The agencies should be encouraged to work with their customers to mitigate rate impacts and develop solutions to unique regional issues.

CREDA thanks the Subcommittee for the opportunity of providing this information and appearing today.

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION (CREDA) MEMBERSHIP

ARIZONA

Arizona Municipal Power Users Association
Arizona Power Authority
Arizona Power Pooling Association
Irrigation and Electrical Districts Association of Arizona, Inc.
Navajo Tribal Utility Authority
(also New Mexico, Utah)
Salt River Project

COLORADO

City of Colorado Springs
Intermountain Rural Electric Association
Platte River Power Authority
Tri-State Generation & Transmission Cooperative
(also Nebraska, Wyoming and New Mexico)
Yampa Valley Electric Association, Inc.

NEVADA

Colorado River Commission of Nevada
Silver State Power Association

NEW MEXICO

Farmington Electric Utility System
Los Alamos County
Tri-State Generation & Transmission Cooperative
City of Truth or Consequences

UTAH

City of Provo
Strawberry Electric Service District
Utah Associated Municipal Power System
Utah Municipal Power Agency

WYOMING

Wyoming Municipal Power Agency

AFFILIATE MEMBER

Navopache Electric Cooperative (Arizona)